Newland

NQuire 200/230

Customer Information Terminal

User Manual

Version 1.2

Revisions

Version	Description	Date
Version 1.0	Initial release, use only in case of NQuire firmware version 1.0 and 1.1.	21-10-2009
Version 1.1	Support as from NQuire firmware version 1.2 / hardware V1.2 and higher	18-12-2009
Version 1.2	Support as from NQuire firmware version 1.4 / hardware V1.3 and higher	30-06-2010

NQuire 200 User Manual

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NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to EN55022, and with the limits for a class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the user's manual, may cause harmful interference to radio communications. Operation of the equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Any unauthorised changes or modifications to this equipment could void the user's authority to operate this equipment. The NQuire is in conformity with the CE standards. Please note that a Newland CE-marked power supply unit should be used to conform to these standards.

Radio and/or television interference: Operation of this equipment in a residential area can cause interference with radio or television reception. This can be determined by turning the equipment off and on. The user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orientate the receiving antenna
- Relocate the devices with respect to the receiver
- Move the device away from the receiver
- Plug the device into a different outlet in order to have the device and receiver on different branch circuits.

If necessary, the user should consult the manufacturer, an authorised Newland dealer or experienced radio/television technician for additional suggestions.

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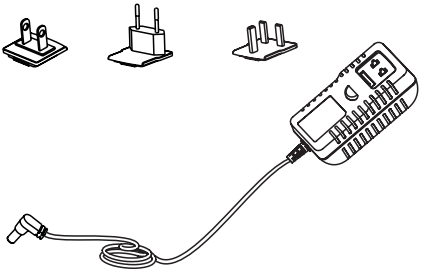
Unpack

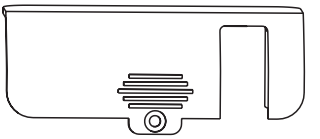
When you unpack the NQuire, the following hardware should be available to you:

- NQuire 200 main unit

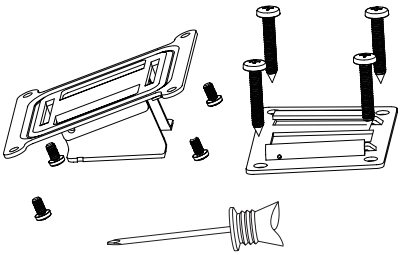
- Power Adapter



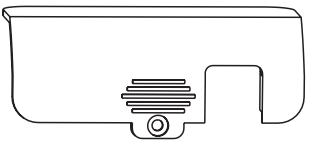
- USB back cover (for external USB devices)



- VESA 75 mount, screws and screwdriver



- Rigid Ethernet connector back cover (optional use)



Declaration of Conformity

Declaration of Conformity

Newland Europe B.V.
Nijverheidsweg 1-d-e
Druten, The Netherlands
Tel: +31 487 5888 99
Fax:+31 487 5182 73

Hereby declares under our sole responsibility that the product:

Product : NQuire200/230 series Customer Information Terminal
Model Number : NQuire200/230
Product View

Will comply with the following product specifications:

Laser/LED Safety: EN60825-1(1994) and IEC 60825-1(1993)

Electrical Safety : EN60950

EMC : EN55022 (2006) Radio disturbance characteristic
EN55024(1998) Immunity characteristics
EN61000-3-2(2006) Limits for harmonic current emissions
EN61000-3-3(1995) Limitation of voltage fluctuations and flicker
EN61000-4-2(1995) Electrostatic discharge immunity
EN61000-4-3(2006) Radiated, radio-frequency, electromagnetic field immunity
EN61000-4-4(2004) Electrical fast transient/burst immunity
EN61000-4-5(2006) Surge immunity
EN61000-4-6(1996) Immunity to conducted disturbances, induced by radio-frequency fields
EN61000-4-8(1993) Power frequency magnetic field immunity
EN61000-4-11(2004) Voltage dips, short interruptions and voltage variations immunity

Means of Conformity:

Please note that a CE-Marked power supply unit should be used to conform to the product specifications stated above.

Peter H. Sliedrecht
CEO Newland Europe B.V.
2009-07-10

Tips and Cautions

The following tips and cautions are used in this manual:

» TOOL, facilitates the use of the manual

» ATTENTION, be aware & read through

» TIPS, E.g., to help understand the product better

» EXAMPLE, to clarify a situation

Introduction of the NQuire 200/230

» The NQuire 200/230 customer information terminal is designed to read/scan, inform and interact with your customer. It is excellent for communicating prices, product information and loyalty points.

» This small and attractive information terminal reads multiple data carriers; from 1D EAN/UPC barcodes to complex 2D barcodes of mobile phone displays. It is even possible to equip the NQuire 200/230 with a RFID reader.

» The NQuire 200/230 complies with standard VESA 75 brackets enabling easy mounting on shelves and walls. Furthermore, it is possible to add USB peripherals to expand this solution with a printer, a hand held scanner for scanning large objects, a magnetic stripe reader and more.

» The NQuire 200/230 supports various networking options: 10/100Mbps Ethernet, WiFi 802.11b/g, GPRS and Power-over-Ethernet so it can be easily integrated into your existing wireless or wired LAN.

» The NQuire 200/230 can be used for various applications such as price checking, product information inquiries, access control, mobile barcode/coupon/ticket validations and more...

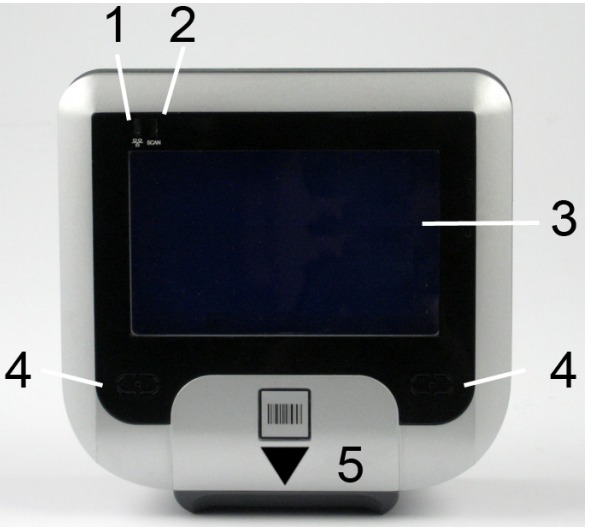
Specifications

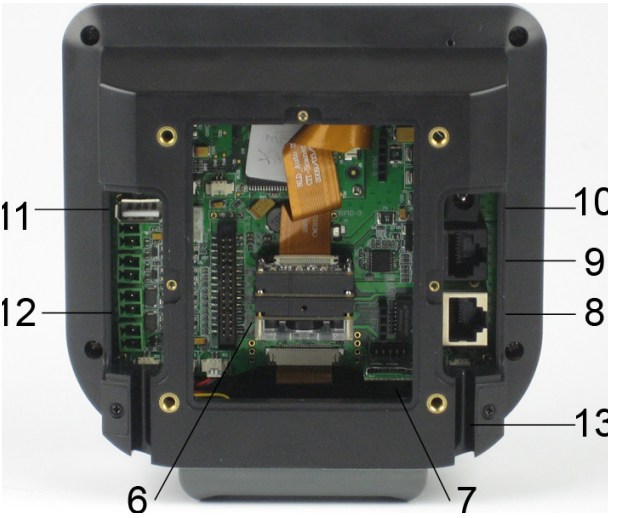
Specifications

Specification		NQuire 201/231	NQuire 202/232
CPU		32-bit ARM9 CPU	
Memory		SDRAM: 32 MB	
		Flash: 8 MB	
		Support Micro SD up to 2GB (optionally used for loading different kind of ttf font set)	
Display		Blue-White 240*128 pixels graphical LCD (90mm x 55mm) / NQuire 230 models have a touch screen with 16 free definable “buttons”	
Interface		10/100 Mbps Ethernet + WiFi OR PoE OR GPRS	
Optional	WiFI	IEEE 802.11b/g, 2.4GHz, DSSS,14dBm, WEP 64/128, WPA	
	GPRS	GSM 850 / 900 / 1800 / 1900 MHz, 85.4Kbps(Max)	
	RFID	Mifare (ISO 14443A)	
External ports	USB	USB Host	
	GPIO	Free programmable GPIO (2 in - 2 out)	
Reading Modes		CCD	Imager
Symbologies			PDF417,QR Code, Data Matrix, Aztec, Vericode, Chinese-Sensible Code
		Code128,EAN-13,EAN-8,Code39,UPC-A,UPC-E, Codabar, Interleaved 2 of 5,China post 25,ISBN/ISSN,Code93, GS1 Databar	
Precision		≥4 mil	≥3 mil
Power	Power Consumption	Up to 12W, depending on configuration	
	Adapter	12DC, 2000mA	
	P-o-E	Power-over-Ethernet IEEE 802.3af (Optional)	
Environment	Operate Temperature	0 °C ~ + 50 °C	
	Storage Temperature	-20 °C ~ + 55 °C	
	Operate Humidity	5% - 90% (no condensation)	
	Storage Humidity	5% - 95% (no condensation)	
Weight		440g	
Dimensions		140 mm(H) * 140 mm (W)* 60 mm(D)	
Operation System		Linux Kernel 2.6.25	
Certifications		CE, FCC	

Product Outline

Outline





1.Network indicator	2.Good scan indicator	3.LCD (touch) display
4.Beeper speaker	5."Where to scan" arrow	6.Barcode scanner
7.Micro SD card Slot	8.Ethernet port	9.Debug port
10.Power jack	11.USB host	12.GPIO connectors
13.Cable run		

1. General Device Operation

How it works

The NQuire 200/230 is a terminal which receives its input via either:

- a 1D CCD barcode scanner (NQuire 201/231).

- a 2D CMOS barcode scanner (NQuire 202/232).

- optional RFID reader (on NQuire 201/202 or 231/232).

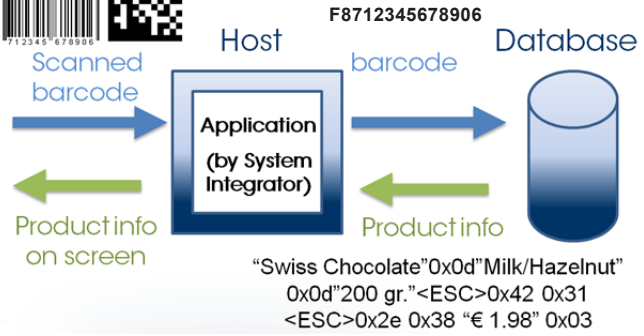
When the input is received, it is sent to the application software which runs on a remote PC/server elsewhere. The application program will send the appropiate display information back to the NQuire 200/230.

By default, the NQuire 200/230 sends its input according to the information in the barcode with code identifier and with [CR]. The code ID's can be disabled in the web configuration tool.

Barcode	Identifier		Barcode	Identifier
EAN-8	FF		Codabar	%
EAN-13	F		Code 93	c
Code128	#		PDF417	r
EAN128	P		QR Code	s
IF 2/5	i		Aztec	z
Code39	*		DataMatrix	u
GS1 Databar	R		RFID option	MF

Example

NQuire 200



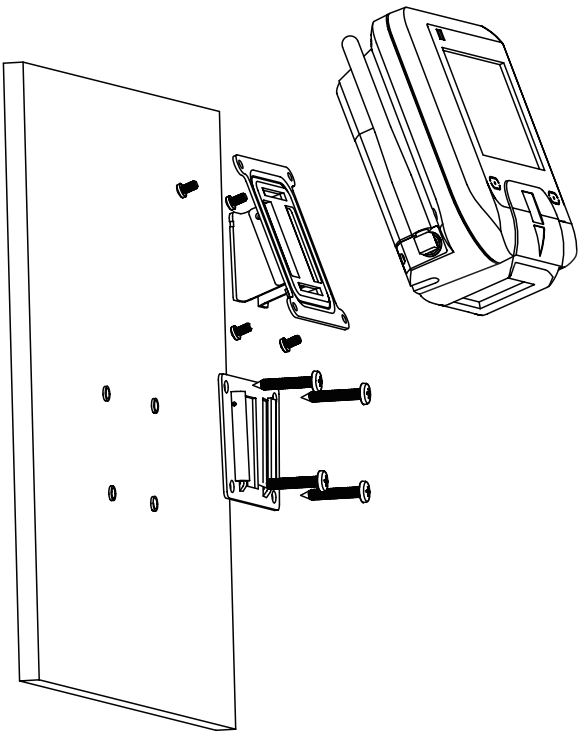
2. Installation

2.1 Mounting

The NQuire 200/230 comes standard with a VESA mount. Please follow the following instructions for mounting:

1. Determine the mounting location.
2. Choose a convenient scanning hight for your user environment.
3. Secure the mounting plate on a wall, countertop or shelve.
4. Secure the adjustable VESA plate on the back cover of the NQuire using the 4 screws and screw inserts.
5. After having connected the appropiate cabling (See chapter 2.2 and 2.3), you can slide the NQuire into the mounting plate.

Example



2.2 Power Supply

Please select, based on the model you have, between the following power supply options:

1. Newland power supply.
2. Power-over-Ethernet.

In case of the power supply:

1. Remove the right cover on the back of the NQuire 200/230.
2. Click the appropiate adapter on the Power Supply and plug it in (see page 5).
3. Lead the cable trough the cable run for appropiate routing (see page 5).
4. Wired ethernet: Connect the Ethernet cable to the Ethernet port (see page 5), close the cover and fix it with the screw. **NOTE:** When using a rigid Ethernet connector (unable to close cover), the "Rigid Ethernet back cover" must be used as described on page 1 to connect to the NQuire.
5. Wireless ethernet: Close the cover and fix it with the screw.

In case of using Power-over-Ethernet:

1. Remove the right cover on the back of the NQuire 200/230.
2. Connect the Ethernet cable to the Ethernet port (see page 5).
3. Lead the cable trough the cable run for appropiate routing (see page 5).
4. Close the cover and fix it with the screw. **NOTE:** When using a rigid Ethernet connector (unable to close cover), the "Rigid Ethernet back cover" must be used as described on page 1 to connect to the NQuire.
5. Connect the other end of the Ethernet cable into a PoE module or a Powered Switch (NOT supplied by Newland). The NQuire supports **both** the Mid-span and End-span Power-over-Ethernet protocol.
6. Connect DC power to either the third party PoE module or Powered Switch.

Do not use the power supply in conjunction with an active PoE solution. This can cause damage to the NQuire.

2.3 Connections

There are 5 physical connectors on the NQuire 200/230:

1. Power connector:

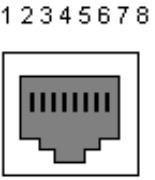
   - It has a positive center and the outer tab is ground.

   - It is compatible with 100 ~240V ~50/60Hz, 12V.

2. Debug connector: only for Newland internal use.

3. Ethernet connector:

PIN	Description
1	Tx+
2	Tx-
3	Rx+
4	Not Used / PoE
5	Not Used / PoE
6	Rx-
7	Not Used / PoE
8	Not Used / PoE



4. USB host connector: In conjuction with the delivered USB back cover (see page 1), this can be used to connect external devices such as a hand held scanner, a keypad or magnetic stripe card reader.

When your user environment asks for scanning large objects, you can connect a Newland HR100 or HR200 hand held scanner to the USB connector. See chapter 5 for details.

5. GPIO connectors (General Purpose Input/Output interface):

   - Two in (2 pin each).

   - Two out (2 pin each).

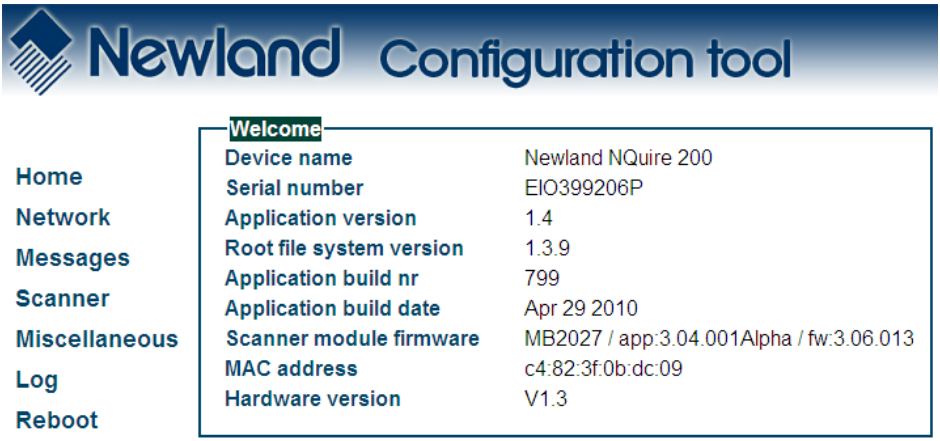
   Please read Chapter 5.3 for connector details and connection possibilities.

3. Configuration

3.1 General

The NQuire 200/230 uses a internal webserver for configuration. This eliminates Operating System restrictions. You can access the configuration tool by following this process:

1. Open/Start your web browser.
2. Enter the NQuire IP address in the address bar (default 192.168.1.200).
3. The following screen opens:

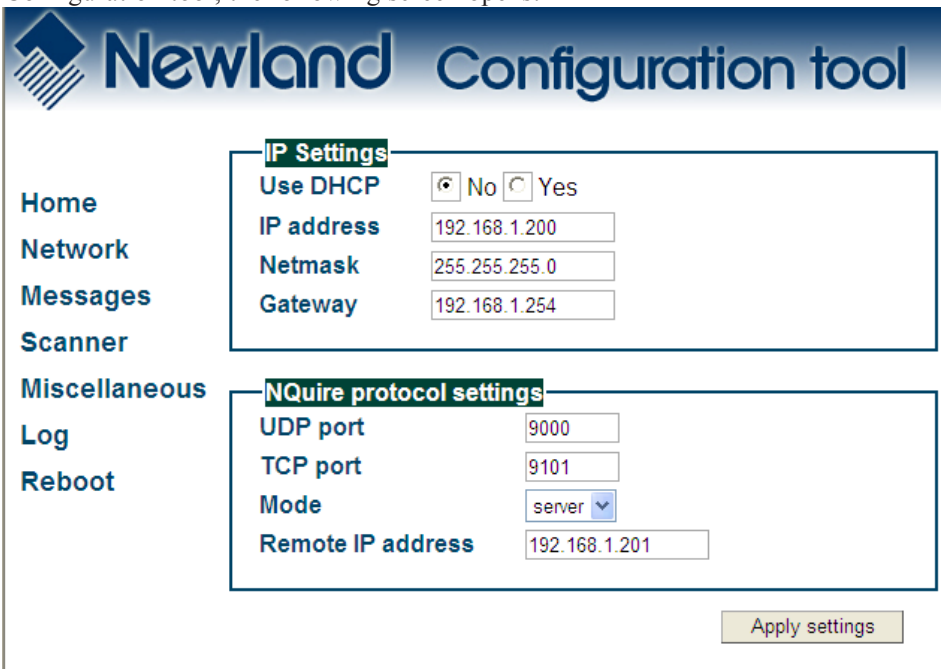


4. In the event of an error screen, please try to "ping" the device:
   - Make sure your PC is in the same IP range as the NQuire, for instance 192.168.1.198. **NOTE:** If you don't want to change your network settings, please scan the DHCP programming code in Appendix A.
   - Type ping 192.168.1.200 in your "command prompt" (MS Windows: cmd. exe).
   - If this is not successful, please double check the IP address (in case of DHCP, you can check the IP address with the programming code "on screen configuration" in Appendix A) and physical Ethernet connection.

All configuration settings are saved in the "cit.conf" file which can be accessed through any FTP program (e.g. FileZilla). This allows you to save your configuration locally and duplicate/ upload it to other NQuire units. Please be aware that you will have to change the IP settings per individual device!

3.2 Network settings

When you are using an Ethernet/PoE NQuire and you click on "Network" in the Configuration tool, the following screen opens:

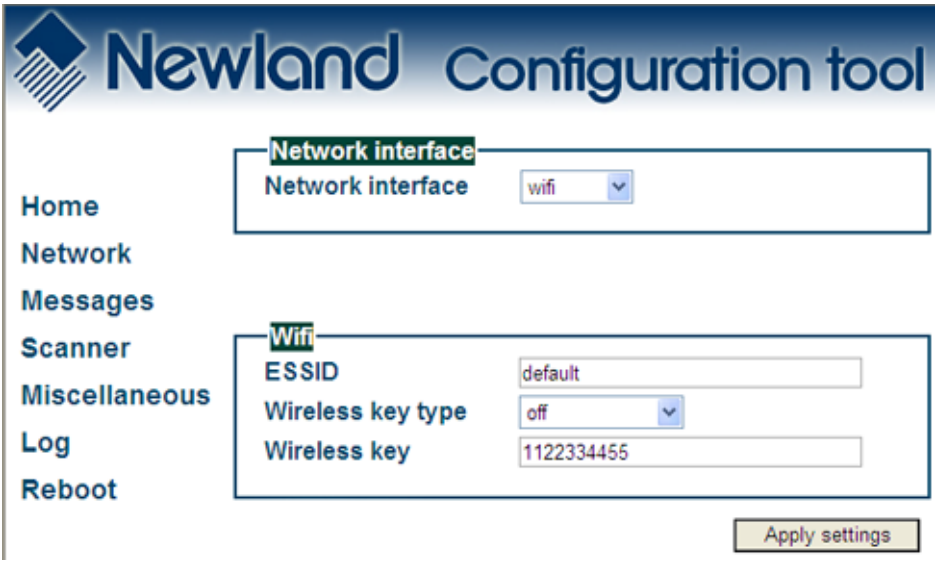


1. IP settings: Use of DHCP (automatic assignment of IP-address to NQuire 200) or not (NQuire has fixed IP-address). In a DHCP-request the NQuire vendor ID is: NQuire200
2. NQuire protocol settings:
   - Define UDP/TCP port;
   - Define connect mode: server (also UDP active), client (also UDP active), (pure) UDP, TCP server (no UDP), TCP client (no UDP) and TCP client on scan (for non-continuous Ethernet connections such as ISDN).
   - Define remote IP address.

For each setting you want to change and save, click the "Apply settings" button after each change and in each box.

3.3 Wireless settings

When you have an Ethernet/WiFi NQuire, two extra boxes appears in the "Network" screen as shown below:



3. Wireless key type: You can choose between three security levels:
   - None: No encryption key is needed, the NQuire is, via your wireless router, available to all WiFi enabled devices.
   - WEP: Entry-level encryption with a wireless key to limit network access.
   - WPA / WPA2: High-end encryption with a wireless key to limit network access.

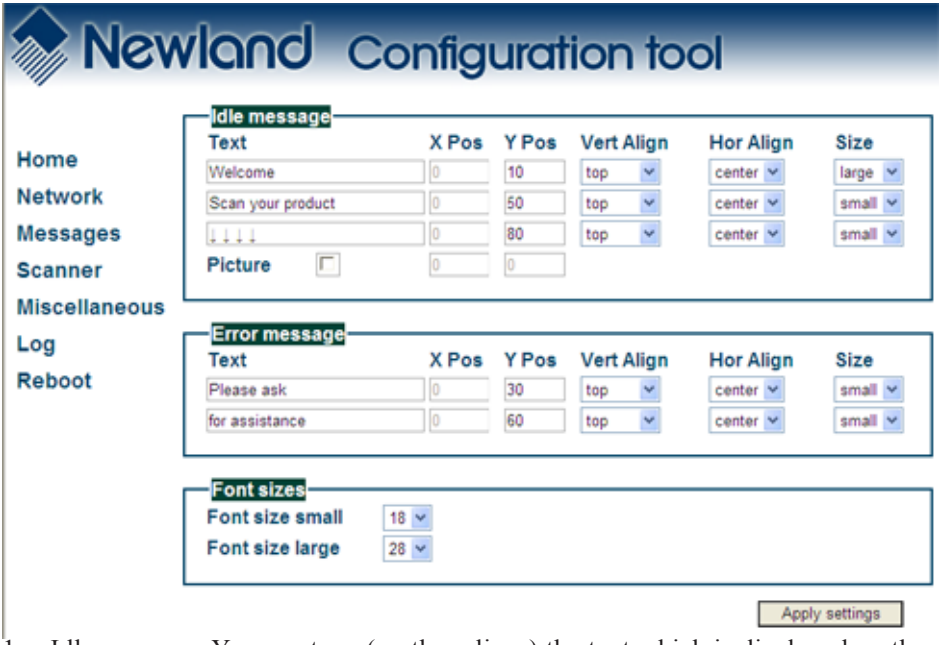
It is strongly advised to use a wireless key to avoid third parties to intrude your network. Please ask your administrator what network security level is available in your user environment.

4. Wireless key: Type the key which is going to be used to encrypt wireless data communication.

For each setting you want to change and save, click the "Apply settings" button after each change.

3.4 Idle screen settings

When you click on "Messages" in the Configuration tool, the following screen opens:



1. Idle message: You can type (on three lines) the text which is displayed on the screen at moments nothing is scanned:
   - X Pos / Y Pos: define the X-and Y positions per pixel on the screen.
   - Vert Align / Hor Align: Vertical and horizontal alignment options which have system default X -and Y screen positions. X positions can only defined when horizontal alignment is set to "left".
   - Size: Choose between system default large -and small size text.
   - Picture: Instead of or as a background picture in addition to the idle messages you can upload an (animated max. 32 frames and 2 frames per sec.) .gif picture file (2-colour black&white, **inverted** (black bkgrd/white drawing), max. 240 x 128 pixels, max. 16K size, non-interlaced) **through any FTP program**. The file name must be renamed to "**welcome.gif**" before uploading. Please upload to the NQuire "**/img**" directory. You can now enable the picture.
2. Error message: You can type (on two lines) the text which is displayed on the screen when the NQuire receives a timeout from the network (NQuire not connected / offline). Timeout settings can be changed at "Miscellaneous".

Idle screen settings

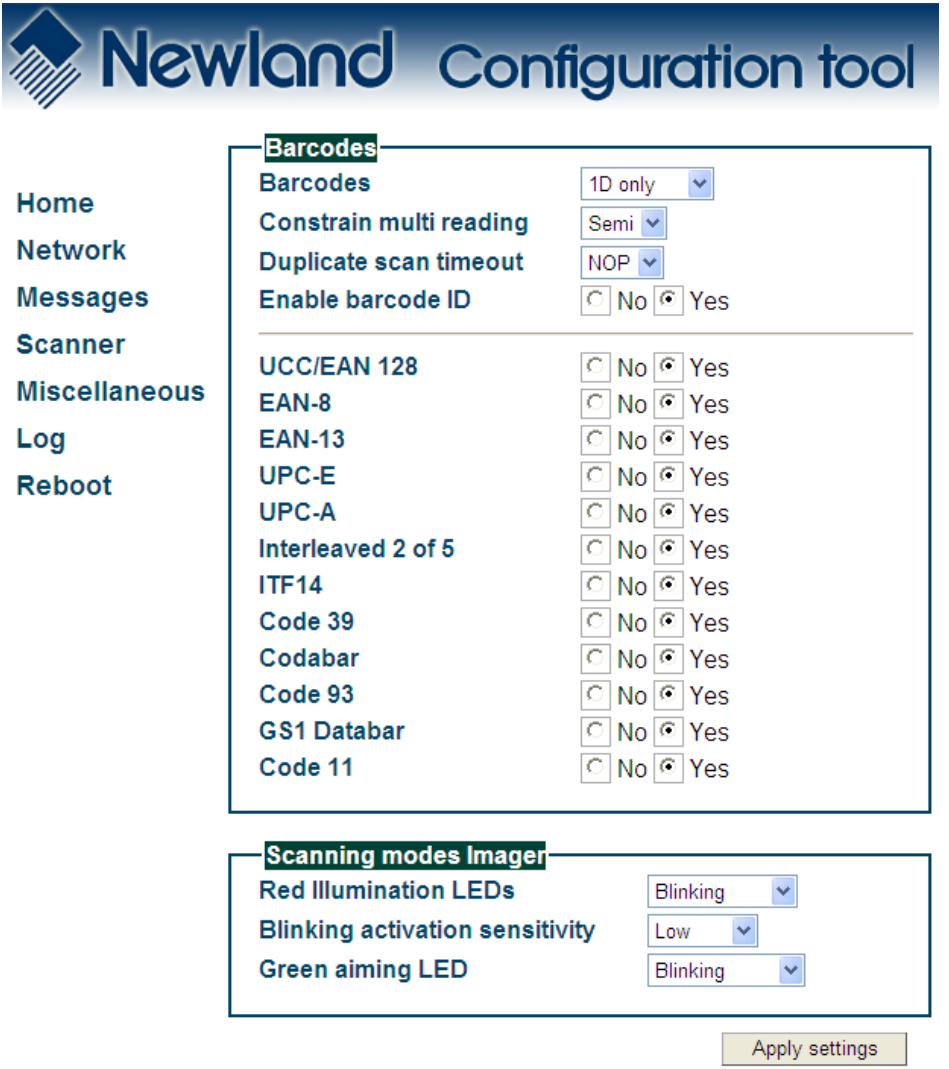
3. Font sizes: You can select here whether the small used font size should be 18 (default) or 24 pixels high. For instance when you use 18 pixels, you can have up to 25 characters on one line and have 8 lines on a display. For the big font size you can choose between a height of 28 or 32 pixels.

   For alternative font sizes and how to implement these, please see Appendix C / NQuire control.

For each setting you want to change and save, click the "Apply settings" button after each change.

3.5 Scanner settings

When you click on "Scanner" in the Configuration tool, the following screen opens:



Scanner settings

Barcodes:

- The NQuire reads, by default, only 1D codes. You can select it to read 2D codes as well (only available for NQuire 202 models).
- *Constrain multi reading*:
  - ON: Same barcode cannot be read twice.
  - Semi (default): Same barcode can only be read after barcode is removed from scanning field first.
  - OFF: Same barcode can be read twice when in scanning field.
- Duplicate scan timeout can be set to avoid that e.g. a ticket is scanned twice.
- The barcode identifiers (as described on page 6) can be enabled or disabled.
- Depending on the selection made (1D or 1D and 2D), you can select which barcodes you want to enable or disable.

2. **Scanning modes Imager (202 model):**

- *Red Illumination LEDs*
  - Blinking (default)
  - Always ON
  - Always OFF (the 2 middle LEDs will stay on; this can result in decreased scanning performance in case of insufficient ambient light)
- *Blinking Sensitivity* (how reactive the blinking sensor is when there is a object in its field of view)
  - Low (default)
  - Medium
  - High
- *Green Aiming LEDs*
  - Blinking (default, LEDs will only be activated when product is in view)
  - Always ON
  - Sensor mode (LEDs will be "Always on" only when product is in view)

Scanning modes CCD (201 model):

- Always ON
- Blinking
- Sensor Mode (default)

RFID Scanner settings: When you have a NQuire unit with a RFID scanner integrated, you will be able to configure also the following options:

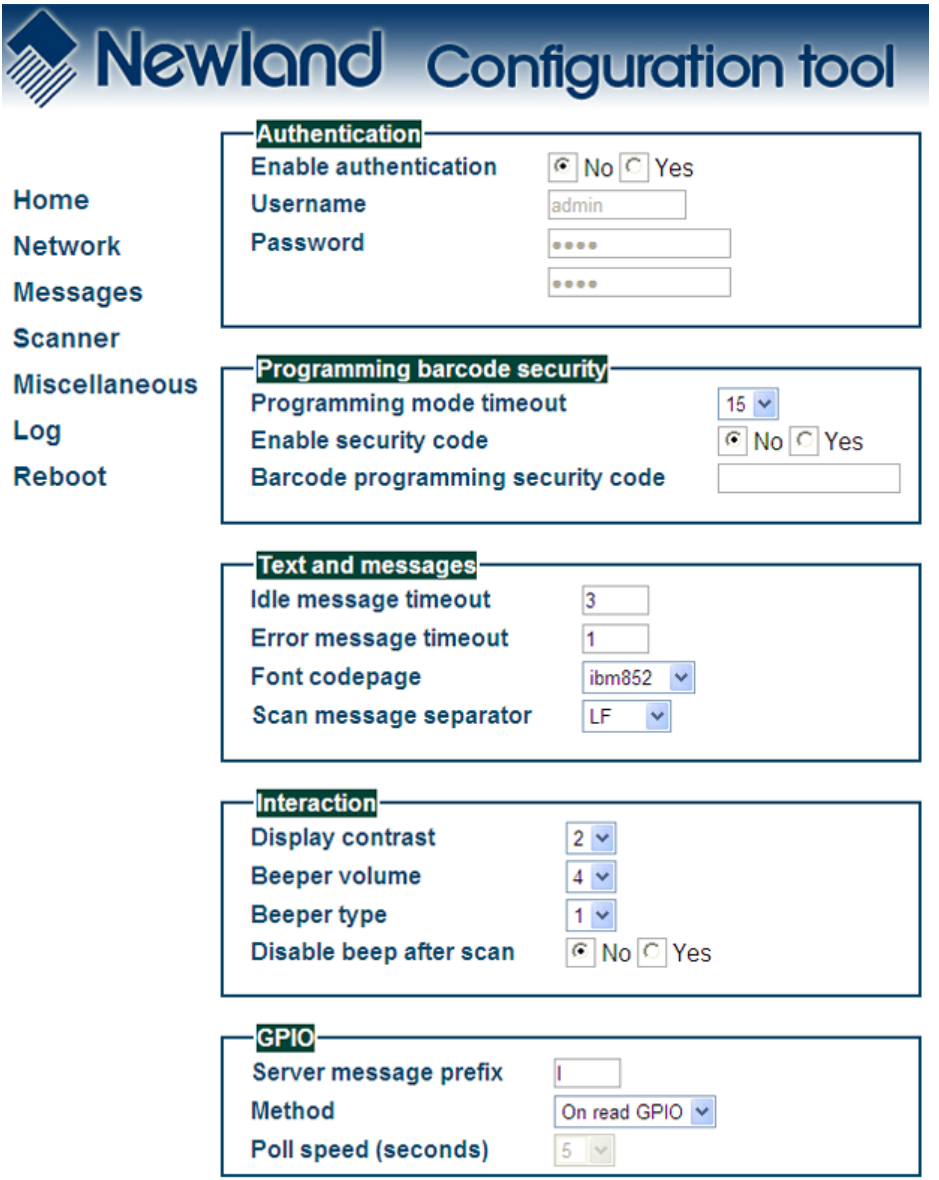
1. Access key: Please type the access key A (no Key B can be inserted) which has been defined for your Mifare tags/cards.

2. Sectors to read: Please define which of the 16 sectors of the Mifare tag/card should be read. Each sector number should be divided by a comma.

3. Duplicate scan timeout: Define how many seconds the RFID reader waits before you can succesfully scan the same tag/card with the same information on it (no time restriction when you scan a different tag/card).

3.6 Miscellaneous settings

When you click on "Miscellaneous", the following screen opens:



Miscellaneous settings

1. Device name: Type a random name used for your own administration.

2. Authentication: You can choose whether or not you want a password protection to access the NQuire configuration tool via a username and password.

3. Programming barcode security:
   - Programming mode timeout: The time before returning to idle state when no programming barcode is scanned in seconds.
   - Security code: You can also program the NQuire with a so-called 2D batch code (only for 202 models, see Appendix) . As you don't not want to allow just anyone to be able to program the unit with barcodes, you can set a security code out of which you can create a barcode to enable programming.

4. Text and messages:
   - Idle message timeout: the period of time before the idle message is displayed again after a scan in seconds.
   - Error message timeout: the period of time the NQuire device waits for a response from the host pc/server in seconds. When this timeout is exceeded, the error message will be displayed for 5 seconds.
   - Font codepage: Choose either UTF-8 (universal fontset which supports most used language fonts) **or** one of the following codepages:

Codepage	Description
851	DOS Greek
852	"Multilingual" West European Latin-1
866	Cyrillic DOS codepage
874	Thai
1250	Central and East European Latin
1251	Cyrillic
1252	West European Latin-2
1253	Greek
1254	Turkish
1257	Baltic

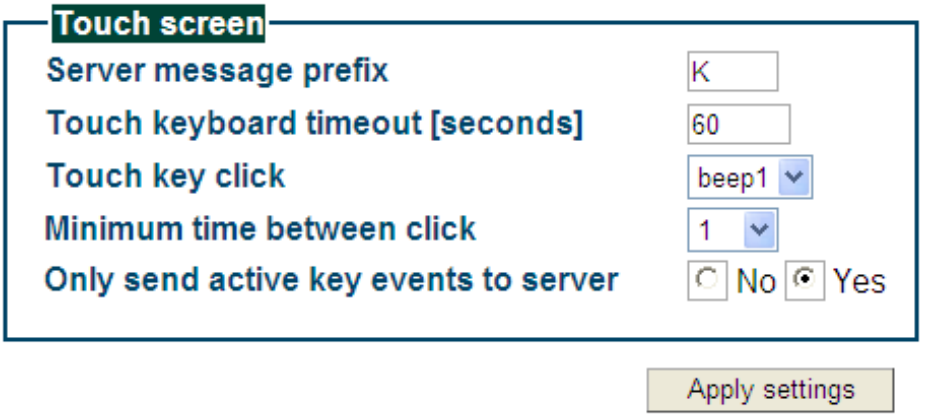
   - The scan message seperator (sent after scan) can be set to LF, CR or both.

5. Interaction:
   - Decide on the level of contrast of the display dependant on the user environment and display reading angle.
   - Choose between different types of beeper tones and volumes.

6. GPIO:
   You can set the parameters for the GPI ports to "On read GPIO" (only when information passes through, "On change"(state change GPI port) or by "polling" the GPI port including the eventual poll speed (continuous process).

Miscellaneous settings

7. When you have an NQuire with touch screen (Model NQuire 23x), one extra box appears in the "Miscellaneous" screen as shown below:



- Server message prefix: You can define a prefix so the database identifies the touch "key" similar to identifying a barcode.
- Touch keyboard timeout: The time the keyboard/button is shown on the screen before returning to idle state.
- Touch key click: You can choose between 3 sounds in the event a key is touched.
- Minimum time between click: Define how many seconds the touch screen waits before you can touch the same key again. Useful to prevent “double clicks”.
- Only send active key events to server: When selected “No” every touch is registered on the network, even when no “button” is shown.

4. How to scan

4.1 Introduction

The NQuire 200/230 is a terminal which receives its input via either:

- a 1D CCD barcode scanner (NQuire 201/231).

- a 2D CMOS barcode scanner (NQuire 202/232).

- optional RFID reader (on NQuire 201/202 or 202/232).

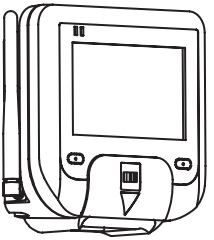
Each input device requires a different approach in scanning movement and orientation.

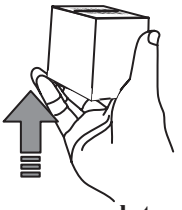
Please check Appendix E for example codes of the different 1D and 2D barcodes.

4.2 How to scan 1D with NQuire 201/231

The NQuire 201 is only able to read 1D barcodes. A single line CCD scan engine reads 1D codes via a horizontal red line.

Example





Optimal reading orientation **Optimal reading approach to scanner**

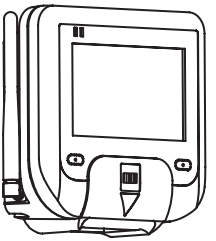
The optimal reading distrance from the scanner screen lies between 5 and 15 centimeters.

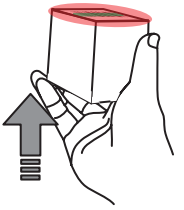
4.3 How to scan 1D/2D with NQure 202/232

The NQuire 202/232 is able to read 1D and 2D barcodes. An omnidirectional imager reads 1D and 2D codes via red leds (for illumination) and a green line (for targeting).

Example

Reading orientation can be 360°





Optimal reading approach to scanner

TIPS

The optimal reading distrance from the scanner screen lies between 5 and 15 centimeters.

4.4 How to scan RFID

The NQuire 201/202 and 231/232 can be equipped with a RFID reader (Mifare ISO14443A) as well. The most common use is for access control applications. A small sticker with a "RFID label" just below the LCD screen indicates the place to scan your RFID tags/cards.

When a RFID tag/card is scanned, the information sent to the back office server is by default preceded by the prefix "MF" to identify this information came from the RFID reader. This is similar in using barcode prefixes.

Example

TIPS

The optimal reading distance from the RFID scanner label is between 0 and 5 centimeters.

5. Connecting external devices

5.1 HR100 Scanner

A Newland HR100 can be attached to the USB port (see page 5) in case of scanning large objects.

When attaching a HR100 which is in factory default settings, please scan the programming codes in Appendix D with the HR100 in order for proper communication with the NQuire.

5.2 HR200 scanner

A Newland HR200 can be attached to the USB port (see page 5) in case of scanning large objects.

When attaching a HR200 which is in factory default settings, please scan the following programming codes with the HR200 in order for proper communication with the NQuire. The sequence is: Code Programming ON ⇨ Allow read batch Code ⇨ Read DataMatrix batch Code ⇨ Code Programming OFF

Code Programming ON

Allow Batch Code

Batch Code HR200

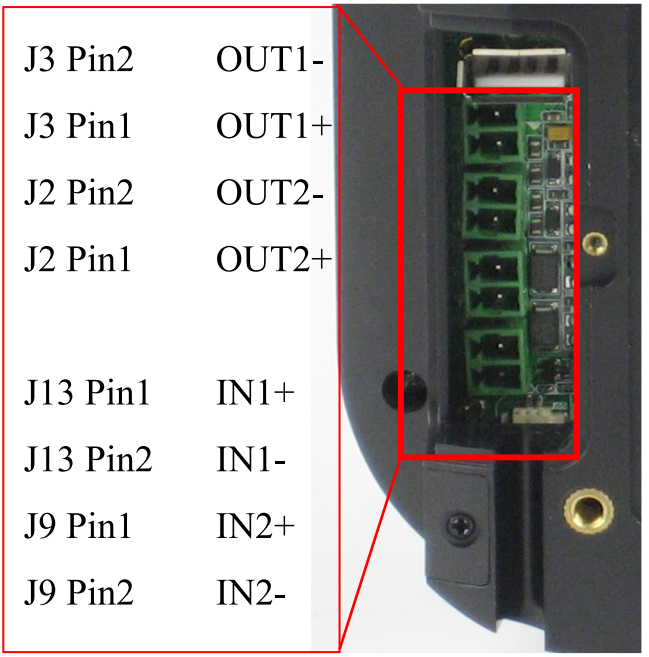
Code Programming OFF

The optimal reading distance of the HR100 and HR200 scanners is around 10 cm.

5.3 GPIO Device

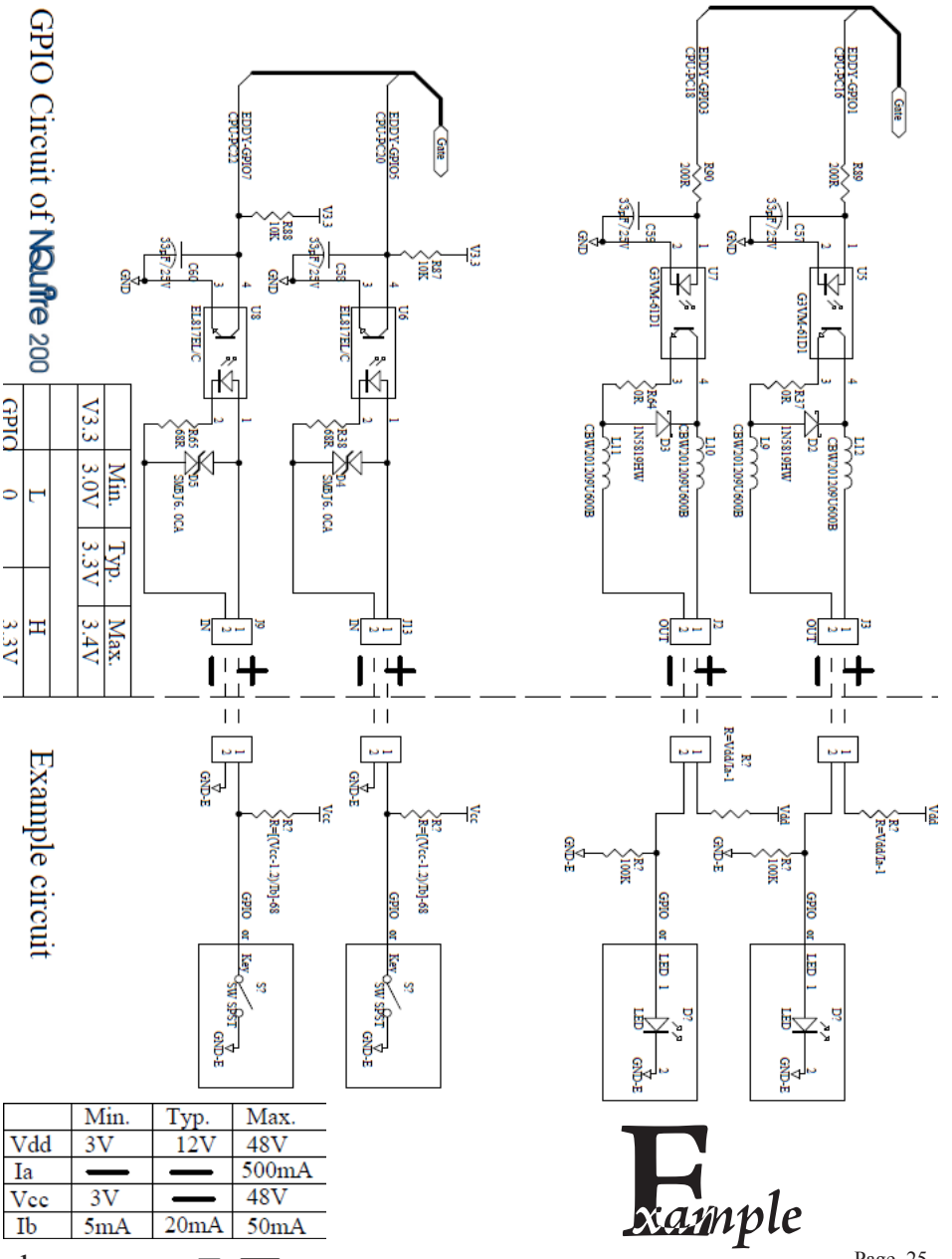
The NQuire 200/230 supports interfacing with a GPIO device such as an entry/exit gate, door lock or LED lamp by connecting the signal wires to the GPIO ports.

The pin definitions of the GPIO ports are as follows:



GPIO device

Please find below an example of how a GPO integration could look like:



	Min.	Typ.	Max.
V3.3	3.0V	3.3V	3.4V
GPIO	L		H
0			3.3V

	Min.	Typ.	Max.
Vdd	3V	12V	48V
Ia	—	—	500mA
Vcc	3V	—	48V
Ib	5mA	20mA	50mA

Appendices

A. NQuire programming codes (simplified hardcopy / part of the configuration tool)

Programming ON

Programming OFF

Program network settings

Network settings

When the below barcode is scanned, the NQuire will have a fixed IP-address, it will use the last configured IP address. The default IP address is 192.168.1.200

/network/dhcp = false

When the below barcode is scanned, the NQuire will function in DHCP mode and it is not necessary to put your own network environment in the default range 192.168.1.xxx

/network/dhcp = true

The programming sequence is succesful, when the NQuire displays: "Programming" > "Scan settings" > "Programming"

Programming ON

Tools

Programming OFF

Beeper settings

No Beeper

Beeper Volume 1

Beeper Volume 2

Beeper Volume 3

Beeper Volume 4

Beeper Volume 5

Beeper Tone 1

Beeper Tone 2

Beeper Tone 3

Always scan the "Programming OFF" barcode in order to return to idle state.

Programming ON

Tools

Programming OFF

LCD display settings

Contrast level 1

Contrast level 2

Contrast level 3

Contrast level 4

Reboot

Reboot

Back to Factory Default & Reboot

Configuration

On screen configuration overview

B. Programming the NQuire with barcodes (only for 202 and 232 models)

Introduction

When you do not have a PC/laptop available at the moment of physically installing the NQuire, you can alternatively create 2D Datamatrix codes from each "configuration section" in the cit.conf file which you can upload through any FTP program. You can create 2D Datamatrix codes for instance on our website www.newland-id.com.

Scanning sequence

Programming ON

Programming OFF

Program configuration settings

After you have scanned the above barcode, you can now scan he 2D Datamatrix code you have created, for EXAMPLE:

=

/network/interface = ethernet
/network/dhcp = false

/network/ip/address = 192.168.1.202
/network/ip/netmask = 255.255.255.0
/network/ip/gateway = 192.168.1.254

The programming sequence is succesful, when the NQuire diplays: "Programming" > "Scan settings" > "Programming"

C. NQuire control

Introduction

The NQuire is controlled by means of ESC commands in order to configure:
- Cursor control.
- Clear display.
- Text alignment.
- Remotely putting the NQuire LCD screen and scanner in "Sleep mode" and "Wake up" again.
- Controlling the touch screen (only on NQuire 23x models)

Text

The NQuire uses proportional font widths. This means a "m" is physically wider than a "i". Consequently, you can not exactly measure how many characters fit on one line. When a line is "too long", some characters will not fit on the screen and will not be shown. Twenty characters per line can be shown on average.

ASCII values from 20 - 255 which are not part of a command are normally displayed on the screen.

The following commands control the position and control of text:
- Carriage return (go to next line): ESC 0x0d
- Linefeed (go to start position next line): ESC 0x0a
- Set cursor (for predefined cursor postions): ESC 0x27
- Set pixel position (placing the cursor on any position): ESC 0x2C
- Align text (easy alignment, such as center of screen, right of screen): ESC 0x2e

The complete command set table is on page 31.

NQuire command set table

ESC	HEX	DEC	CHAR	Action	Parameters	
ESC	24 or 25	36 or 37	$ or %	Clear Display and move the cursor to the top left position		
ESC	27	39	‘	Set cursor position [1]	<POS> 0x30-0x3F	<LINE> 0x30-0x34
ESC	2C	44	,	Set current pixel position on display [2]	<POS> 0x30-0xAF	<LINE> 0x30-0X6F
ESC	2E	46	.	Align a string of text [3]	<ALIGN> 0x30-0x3E	<DATA> “...”[0x03]
ESC	42	66	B	Select font set [4] Normal: 0x30 Large: 0x31	<FONTSET> 0x30-0x31	
ESC	5A	90	Z	Reboot		
ESC	5B	91	[	Enable/Disable scanning	<MODE> Disable:0x30 Enable:0x31	
ESC	5C	92	\	Enable/Disable Backlight	<MODE> Disable:0x30 Enable:0x31	
ESC	5D	93	]	Sleep/Wakeup barcode scanner	<MODE> Disable:0x30 Enable:0x31	
ESC	5E	94	^	Generate default beep		
ESC	7E	126	~	GP-Out on/off	<PORT> Out1:0x30 Out2:0x31	<STATE> Off:0x30 On:0x31
ESC	7F	127		State request GP-In	<PORT> In1:0x30 In2:0x31	

[1] The actual pixel position is dependant on the selected font set:
- Every x-position is a multiple of 8 pixels.
- Every y-position is dependant on selected font set; height of 18, 24, 28 or 32 pixels.
- POS: 0-15 (0x30 - 0x3F).
- LINE: 0-4 (0x30 - 0x34).

[2] This allows a text to be displayed anywhere on the screen. Please be aware that a character can be displayed on in part when it does not fully fits on the screen.
- POS: 0-127 (0x30) - 0xAF).
- LINE: 0-63 (0x30 - 0x6F).

[3] Display a text, using current used font set, on a calculated position on the screen:

<ALIGN>	Action
0x30	Left top
0x31	Center top
0x32	Right top
0x33	Left center
0x34	Center
0x35	Right center
0x36	Left bottom
0x37	Center bottom
0x38	Right bottom

<ALIGN>	Action
0x39	Left, using current y-coordinate
0x3A	Center, using current y-coordinate
0x3B	Right, using current y-coordinate
0x3C	Top, using current x-coordinate
0x3D	Center, using current x-coordinate
0x3E	Bottom, using current x-coorinate

<DATA> field has a maximum length of 25 characters. If less characters are used, please use 0x03 (ETX) as last character.

[4] Please find below a list of font sizes which can be used directly in your application code as an alternative to the set which can be configured in the web configuration tool at the “Messages” tab.

Code	Font size
\x1b\x42\x32	6 pixels
\x1b\x42\x33	12 pixels
\x1b\x42\x34	18 pixels
\x1b\x42\x35	24 pixels
\x1b\x42\x36	30 pixels
\x1b\x42\x37	36 pixels
\x1b\x42\x38	42 pixels
\x1b\x42\x39	48 pixels
\x1b\x42\x3A	54 pixels
\x1b\x42\x3B	60 pixels
\x1b\x42\x3C	66 pixels
\x1b\x42\x3D	72 pixels

Controlling the touch screen (only for 23x models)

The NQuire 230 series has a touch layer on the screen containing 16 free-definable "buttons". The picture shown on the screen is related to 1 or more touchscreen buttons.

The names of the images/buttons should not be too long and not contain spaces. Together they can have 64-16-3=45 characters. Pre-defined buttons can be downloaded from the NQuire via the FTP directory “img”. You can upload your own .gif files into this directory as well.

\xf2<xxx.gif>\x0d\x0d<position by key-id><coupled to key-id>n \x03

Touch screen position layout:

0	1	2	3
4	5	6	7
8	9	a	b
c	d	e	f

Command	Action
x1b\x42\x30	Normal font set
\x1b\x24	Clear screen, cursor top left
\x1b\xf21.gif\x0d\x0d44\x03\ x1b\xf22.gif\x0d\x0d55\x03\ x1b\xf23.gif\x0d\x0d66\x03\ x1b\xf2ok.gif\x0d\x0d77\x03\ x1b\xf24.gif\x0d\x0d88\x03\ x1b\xf25.gif\x0d\x0d99\x03\ x1b\xf26.gif\x0d\x0daa\x03\ x1b\xf2cancel.gif\x0d\x0dbb\ x03\x1b\xf27.gif\x0d\x0dcc\ x03\x1b\xf28.gif\x0d\x0ddd\ x03\x1b\xf29.gif\x0d\x0dee\ x03\x1b\xf20.gif\x0d\x0dff\x03	Align image buttons on screen
\x1b\x42\x30\x1b\x2c\x30\ x35Welcome ${user} Code: \ x03	Normal font set, clear screen, cursor top and align text right center

Example

Example screens

Here are some example on how to generate different screens on the NQuire 200:

Example

Command	Action
x1b\x42\x30	Normal font size
\x1b\x25	Clear screen, cursor top left
Cheese	Text on screen
\x0d	Carriage return
500 gr.	Text on screen
\x1b\x42\x31	Large font size
\x1b\x2e\x38\x80 5.69\x03	Align right bottom and text on screen

Example

Command	Action
x1b\x42\x31	Large font size
\x1b\x24	Clear screen, cursor top left
\x1b\x2e\x31Special offer!\x03	Align center top and text on screen
\x1b\x42\x30	Normal font size
\x1b\x2e\x346-pack water 0.5L\x03	Align center and text on screen
\x1b\x42\x31	Large font size
\x1b\x2e\x37\x80 0.99\x03	Align center bottom and text on screen

The notation of x1b is the value of <ESC> in the NQuire command set table. Notation of, for example, \x25 means hexadecimal value 25.

D. HR100 programming

Scan the below barcodes starting with the top left "Code Programming ON" and working from left to right, ending with "Code programming OFF".

Code Programming ON

*Load All Factory Default

Code Programming ON

Program Stop Suffix

0

D

Save

Code Programming ON

Enable Stop Suffix

Allow Code ID Prefix

Code Programming OFF

E. Testing Codes

Code128

UCC/EAN-128

UPC-E

UPC-A

Interleaved 2 of 5

Code 39

PDF 417

QR Code

Aztec

Data Matrix

F. Maintenance

Keeping the NQuire dust-free

To keep the inside of the NQuire dust-free and at its peak performance, please always screw the back covers back onto the backhousing.

Wired Ethernet: When you are using a rigid Ethernet connector (unable to close back cover), the "Rigid Ethernet back cover", as described on page 1, must be used to connect to the NQuire.

USB devices: The USB back cover, as described on page 1, must be used to connect your usb device to the connector on the NQuire.

Cleaning

Occasional clean the scanner window to remove dust, dirt and fingerprints. Cleaning can be performed during operation with a non-abrasive glass spray cleaner and a soft lint-free cloth.

Clean the housing and display screen every now and then. Take care:
- Use a mild glass spray cleaner;
- Spray the cleaner on a soft, lint-free cloth;
- Wipe the NQuire clean.

The display screen and bottom scanner screen are scratch-sensitive, please clean carefully!

The NQuire should **NOT** be cleaned with cleaners containing:
- Aromatic hydrocarbons.
- Chloride.
- Acids, oxydizing agents.
- Abrasives.
- Other aggressive cleaners.

G. Troubleshooting

Problem	Possible Cause	Possible Solution(s)
NQuire does not turn on	No power to the NQuire	**AC outlet power** - Connect the approved power supply to an AC power source and to the NQuire power connector. See page 5. **Power-over-Ethernet** - Connect Ethernet cable to NQuire Ethernet port. - Connect other end of Ethernet cable to Power-Over-Ethernet (POE) device. - Connect POE device power supply to an AC outlet. - Perform continuity check on the Ethernet cable.
NQuire does not respond to polls/pings from the host computer	No communication between NQuire and the host.	Check cables to the NQuire. Ensure the NQuire IP-address is the address the host is polling/pinging. Check communication parameters.
NQuire does not send data to host computer	NQuire is not connected to the host.	1. Check all cabling to host computer. 2. Incorrect configuration of host ip address or port.
No Wireless communication with NQuire 20xRW	Incorrect WiFi settings	Please scan the "back to factory default" barcode on page 28, connect a physical Ethernet cable and try configuring again.
Parameter changes made using Web Configuration Tool were not retained after the NQuire was re-booted	Parameter changes were not saved.	For each setting you want to change and save, click the "Apply settings" button after each change and in each box
The NQuire 202 does not read 2D barcodes	Default settings are not changed in Web Configuration tool	See chapter 3.5 how to set the internal scanner to read 2D barcodes as well.

Newland

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